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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,011

02/01/2005

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1152-0315PUS1

7483

2292 7590 08/11/2009  
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EXAMINER

XIAO, KE

ART UNIT

PAPER NUMBER

2629

NOTIFICATION DATE

DELIVERY MODE

08/11/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/523,011	<b>Applicant(s)</b> SUGINO ET AL.	
	<b>Examiner</b> Ke Xiao	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 34-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 34-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Claims 1-23** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The original disclosure fails to teach "a section that stores a plurality of predetermined illumination durations which respectively correspond to possible genres of an image" and "a section that variably controls the illumination duration of a backlight based on the detected genre of the image according to the stored illumination duration which corresponds to the detected genre of the image". No where in the original specification does it specify a section that stores illumination durations with respect to possible genres of an image. The original specification states that this is done for *types* of images but does not equate type *specifically* to genre.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-23 and 34-48** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirakata (US 2002/0067332) in view of Shirahama (US 7,151,572).

Regarding **Claim 1**, Hirakata teaches a liquid crystal display device, comprising:  
a section that detects a type of content of an image to be displayed on a liquid crystal display panel (Hirakata, paragraph [0031]); and  
a section that variably controls the illumination duration of a backlight based on the detected type of the content of the image (Hirakata paragraph [0032] backlight changes lighting modes when a motion picture is detected).

wherein the image signal to be displayed is written into a liquid crystal display panel while a backlight is activated intermittently within one frame period (Hirakata, Figs. 1A-1E).

Hirakata fails teach:

a section that detects a genre of an image to be displayed;  
that the detecting is based on information other than the image signal to be displayed, the genre being based on classification defined in electronic program information;

a section that stores a plurality of predetermined illumination duration which respectively correspond to possible genres of an image; and

the variably controlling is based on the detected genre of the image according to the stored illumination duration which corresponds to the detected genre of the image.

Shirahama teaches:

a section that detects a genre of an image to be displayed (Shirahama Figs. 4 and 5, genre detection);

that the detecting is based on information other than the image signal to be displayed, the genre being based on classification defined in electronic program information (Shirahama, Col. 3 lines 50-58 genre retrieved from EPG);

a section that stores a plurality of predetermined brightness settings which respectively correspond to possible genres of an image (Shirahama, Figs. 4 and 5 presets for each genre are stored in memory); and

the variably controlling is based on the detected genre of the image according to the stored brightness settings which corresponds to the detected genre of the image (Shirahama, Figs. 4 and 5 presets are loaded when genre is detected).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the genre detection and display image optimization technique in combination with the brightness adjustment system of Hirakata in order to provide a more optimized and automatic adjustment for each type and genre of image being displayed by the LCD.

It should be noted that Shirahama specifically teaches storing brightness settings but does not specifically teach storing illumination durations. However Hirakata teaches variable duties cycles that make up different brightness settings, therefore the references taken together would meet the limitations of storing and controlling the variable illumination durations according to genre.

Regarding **Claim 11**, Hirakata teaches a liquid crystal display device, comprising:  
a section for detecting a type of content of the image to be displayed on the liquid crystal display panel (Hirakata, paragraph [0031]); and

a section that variably controls the duration in which a black display signal is supplied to the liquid crystal display panel based on the detected type of the content of the image (Hirakata, Figs. 1A-1E, paragraph [0128]).

wherein an image signal to be displayed and a black display signal are written into a liquid crystal display panel within one frame period (Hirakata, Figs. 1A-1E, paragraph [0128]).

Hirakata fails teach:

a section that detects a genre of an image to be displayed;  
that the detecting is based on information other than the image signal to be displayed, the genre being based on classification defined in electronic program information;

a section that stores a plurality of predetermined illumination duration which respectively correspond to possible genres of an image; and

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variably controlling both the black display signal as well as the illumination duration based on the detected genre of the image according to the stored illumination duration which corresponds to the detected genre of the image.

Shirahama teaches:

a section that detects a genre of an image to be displayed (Shirahama Figs. 4 and 5, genre detection);

that the detecting is based on information other than the image signal to be displayed, the genre being based on classification defined in electronic program information (Shirahama, Col. 3 lines 50-58 genre retrieved from EPG);

a section that stores a plurality of predetermined brightness settings which respectively correspond to possible genres of an image (Shirahama, Figs. 4 and 5 presets for each genre are stored in memory); and

variably controlling both the black display signal as well as the illumination duration based on the detected genre of the image according to the stored illumination duration which corresponds to the detected genre of the image (Shirahama, Figs. 4 and 5 presets are loaded when genre is detected).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the genre detection and display image optimization technique in combination with the brightness adjustment system of Hirakata in order to provide a more optimized and automatic adjustment for each type and genre of image being displayed by the LCD.

It should be noted that Shirahama specifically teaches storing brightness settings but does not specifically teach storing illumination durations. However Hirakata teaches variable duties cycles that make up different brightness settings, therefore the references taken together would meet the limitations of storing and controlling the variable illumination durations according to genre. Also the black display duration is inversely proportional to the illumination duration which means it would also be based on the detected genre.

Regarding **Claim 18**, Hirakata teaches a liquid crystal display device comprising:  
a section for detecting a type of content of an image to be display on a liquid crystal display panel (Hirakata, paragraph [0031]), and

a section for variably controlling a ratio of display duration of the image display in one frame period, based on the detected type of the content of the image (Hirakata, paragraph [0032]).

wherein display duration of an image signal and non-display duration are provided in one frame period (Hirakata, Figs. 1A-1E).

Hirakata fails teach:

a section that detects a genre of an image to be displayed;  
that the detecting is based on information other than the image signal to be displayed, the genre being based on classification defined in electronic program information;

a section that stores a plurality of predetermined illumination duration which respectively correspond to possible genres of an image; and



variably controlling both the black display signal as well as the illumination duration based on the detected genre of the image according to the stored illumination duration which corresponds to the detected genre of the image.

Shirahama teaches:

a section that detects a genre of an image to be displayed (Shirahama Figs. 4 and 5, genre detection);

that the detecting is based on information other than the image signal to be displayed, the genre being based on classification defined in electronic program information (Shirahama, Col. 3 lines 50-58 genre retrieved from EPG);

a section that stores a plurality of predetermined brightness settings which respectively correspond to possible genres of an image (Shirahama, Figs. 4 and 5 presets for each genre are stored in memory); and

variably controlling both the ratio of display duration of the image signal as well as the illumination duration based on the detected genre of the image according to the stored illumination duration which corresponds to the detected genre of the image (Shirahama, Figs. 4 and 5 presets are loaded when genre is detected).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the genre detection and display image optimization technique in combination with the brightness adjustment system of Hirakata in order to provide a more optimized and automatic adjustment for each type and genre of image being displayed by the LCD.

It should be noted that Shirahama specifically teaches storing brightness settings but does not specifically teach storing illumination durations. However Hirakata teaches variable duties cycles that make up different brightness settings, therefore the references taken together would meet the limitations of storing and controlling the variable illumination durations according to genre. Also the ratio proportional to the illumination duration which means it would also be based on the detected genre.

Regarding **Claim 35 and 36**, Hirakata teaches a liquid crystal display device, comprising:

- a section for detecting a type of content of the image to be displayed on the liquid crystal display panel (Hirakata, paragraph [0031]); and

- a section for variably controlling the duration in which a black display signal is supplied to the liquid crystal display panel based on the detected type of the content of the image (Hirakata, Figs. 1A-1E, paragraph [0128]);

- wherein the image signal to be displayed and a black display signal are written into a liquid crystal display panel within one frame period (Hirakata, Figs. 1A-1E and 8A-8D, the black levels are dependent on the backlight illumination times and adjusting the black levels then adjusts the image signals in turn when ever there is no image signal the display is displaying a black signal).

- the gray scale levels of the input image and the gray scale voltages applied to the display crystal display panel in response to the input image signal are varied depending on the application of the black display signal such that a relationship

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between the input image signal and the display brightness is held constant (Hirakata, Figs. 1A-1E, 8A-8D).

Hirakata fails to disclose a section for detecting a user's instructional input. Shirahama discloses a section for detecting a user's instructional input which defines the type of image to be displayed as well as changing the brightness setting according to the user's instructional input Shirahama, Col. 2 lines 34-3.

It would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Hirakata, and have the input be user instructional input, as taught by Shirahama, thus enabling the user to adjust the display brightness *in addition* to the automatic adjustments made by Hirakata.

Regarding **Claim 2**, Hirakata further teaches wherein the backlight emits a flash of light over the full screen every one frame period in synchronization with a vertical synchronizing signal supplied to the liquid crystal panel (Hirakata, Figs. 1A-1E backlight is synced with the vsync signal).

Regarding **Claim 3**, Hirakata further teaches that the backlight is operated so that multiple luminous sections are activated one to the next, scan wise in synchronization with vertical and horizontal synchronizing signals supplied to the liquid crystal display panel (Hirakata, Figs. 17B).

Regarding **Claim 4, 12 and 34**, Hirakata further teaches that the luminous intensity of the backlight is varied in accordance with the illumination duration of the backlight and the application duration of the black display signal (Hirakata, Figs. 1A-1E paragraph [0110]).

Regarding **Claim 5, 6, 13, 14, 19, 20, 40 and 41**, Hirakata further teaches wherein gray scale levels of the input image signals and the gray scale voltages applied to the liquid crystal display panel in response to the input image signal are varied depending on the illumination duration of the backlight, the application duration of the black display signal and the ratio of the display duration of the image signal in the one frame period, such that the input image signal and the display brightness is held constant (Hirakata, Figs. 9A-9B, paragraphs [0031-0032, 0110] gray signals and black signals change when backlight changes amplitudes change to maintain brightness).

Regarding **Claim 7**, Hirakata in view of Shirahama further teaches wherein the frame frequency of the input image signal is varied based on the genre of the image (Hirakata, paragraph [0110], Shirahama Figs. 5A and 5B).

Regarding **Claims 8, 15 and 21**, Hirakata in view of Shirahama further teaches that the electronic program information is included in program guide information included in broadcast data (Shirahama, Col. 3 lines 50-58 genres retrieved from EPG).

Regarding **Claim 9, 16 and 22**, Hirakata in view of Shirahama further teaches wherein electronic program information is included in contents information obtained from external media (Hirakata, paragraph [0010] television is considered external media motion picture is detection from the contents information which is the image, Shirahama Figs. 5A and 5B).

Regarding **Claim 10, 17 and 23**, Hirakata in view of Shirahama further teaches that the electronic program information is based on video source select command information input by the user (Shirahama, Col. 2 lines 34-36).

Regarding **Claims 37, 38, 42 and 43**, Hirakata in view of Shirahama further teaches that the application duration of the black display signal as well as the ratio of the display duration in the one frame period are varied (Hirakata, paragraphs [0031-0032, 0110] gray signals and black signals as well as display light ratio change when backlight changes) based on video source select command or video adjustment command information input by the user (Shirahama, Col. 2 lines 34-36).

Regarding **Claim 44**, Hirakata further teaches wherein the luminous intensity of a backlight that illuminates the LCD panel is varied accordance with the application duration of the black display signal (Hirakata, Figs. 8A-8D).

Regarding **Claims 45 and 46**, Hirakata in view of Shirahama further teaches wherein the application duration of the black display signal is varied (Hirakata, Figs. 8A-8D) based on video source select command and/or video adjustment command information input by the user (Shirahama, Col. 2 lines 34-36).

Regarding **Claims 47 and 48**, Hirakata in view of Shirahama further teaches wherein the ratio of the display duration of the image signal in the one frame period is varied (Hirakata, Figs. 1A-1E and 8A-8D) based on video source select commander and/or video adjustment command information input by the user (Shirahama, Col. 2 lines 34-36).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-23 and 34-48 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ke Xiao whose telephone number is (571)272-7776. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ke Xiao/  
Examiner, Art Unit 2629

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